

Stations in existence at the time were designed purely for the purpose of detecting earthquakes and research started immediately to determine the type of improved seismograph that could be useful in monitoring a hypothetical test ban treaty.

The United Kingdom was first off the mark. The UK Atomic Energy Authority started experimenting with cruciform arrays of seismographs, basically using the then-developing radio antenna theory to detect seismic waves. These arrays could be "steered" electronically to reduce earth noise and improve detection. They were also able to determine an approximate direction and distance (and thus location) of a seismic event.

In the early 1960s the British built four of these arrays, all of which are still operating, in Scotland, India, Australia, and the Canadian Northwest Territories near Yellowknife. The Yellowknife array comprised 19 seismometers and had four arms, each about 10 kilometres long.

The original Yellowknife array was administered by the Canadian Defence Research Board until 1962, when responsibility was transferred to the Department of Energy, Mines and Re-

sources. The array was much improved over the years and is now computerized. It forms a small but significant part of a continent-wide network of Canadian seismograph stations now numbering more than 100.

The scientific literature demonstrates that during those early years, the small Canadian group of experts made a substantial contribution to the general understanding of what reliable detection and identification of distant seismic events entails. During the past 10 years, the research of this group has become increasingly linked to the highly technical international discussions on verification of a test ban treaty. These are conducted mainly in Geneva, with scientists of Energy, Mines and Resources acting on behalf of the Department of External Affairs.

One indication of the Canadian interest in achieving an effective test ban treaty was our sponsorship in the United Nations General Assembly in the late 1960s of a key resolution asking all countries to deposit with the UN information about the capabilities of their respective seismic observatories. This was so that an assessment could be made of their capacity to contribute to a test ban moni-